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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/802,205 | 03/17/2004 | Michael Leu | 4999-0030 | 3767 |

35301 7590 03/13/2006

MCCORMICK, PAULDING & HUBER LLP
CITY PLACE II
185 ASYLUM STREET
HARTFORD, CT 06103

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| EXAMINER |
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EDMONDSON, LYNNE RENEE

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| ART UNIT | PAPER NUMBER |
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1725

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/802,205

Applicant(s)

LEU ET AL.

Examiner

Lynne Edmondson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/17/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3 and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Akiyama et al. (USPN 5176310).

Akiyama teaches a wire bonder comprising a bondhead (6), a power supply for driving the bondhead (col 7 lines 5-10), a power switch for controlling the power supply (col 10 line 65 – col 21 line 53), a means for setting time (col 17 line 63 – col 19 line 33 and col 24 lines 23-53), a control program and an emergency switch (18e, 18f) which produces a signal. The device is capable of switching off electrical consumers not required (figures 1 and 7-9, col 7 lines 11-37 and col 15 lines 37-58). The device further comprises a power sensor, a height sensor (col 7 lines 11-37 and col 24 line 55 – col 25 line 55), an air sensor (col 9 line 58 – col 10 line 6), and a light curtain detector (col 9 lines 9-57).

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3. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Kising et al. (USPN 5637947, IDS).

Kising teaches a wire bonder comprising a bondhead, a power supply for driving the bondhead, a power switch for controlling the power supply, a timer, a control program and an emergency switch which produces a signal (col 2 lines 15-18). The device is capable of switching off electrical consumers not required (col 2 line 45-col 3 line 57, col 4 lines 28-32, col 5 lines 4-22). The device further comprises a power sensor (col 2 lines 15-18 and col 4 lines 28-32) and a pressure sensor (col 7 line 18 – col 8 line 6).

4. Claims 1-6 and 13-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Sugimoto et al. (USPN 4485957, IDS).

Sugimoto teaches a wire bonder comprising a bondhead (1), a power supply (E) for driving the bondhead (col 4 lines 45-54), a power switch for controlling the power supply, a timer, a control program and an emergency switch (21) which produces a signal. The device is capable of switching off electrical consumers not required (figures 1A, 1C, 2 and 9 and col 5 line 14 – col 6 line 65). The device further comprises a power sensor, a pressure sensor (col 7 lines 11-37), an air sensor (col 3 lines 6-12), and a light curtain (beam) detector (col 7 lines 34-47).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 7-12 and 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugimoto et al. (USPN 4485957, IDS).

Sugimoto teaches a wire bonder comprising a bondhead (1), a power supply (E) for driving the bondhead (col 4 lines 45-54), a power switch for controlling the power supply, a timer, a control program and an emergency switch (21) which produces a signal. The device is capable of switching off electrical consumers not required (figures 1A, 1C, 2 and 9 and col 5 line 14 – col 6 line 65). The device further comprises a power sensor, pressure sensor (col 7 lines 11-37), an air sensor (col 3 lines 6-12), and a light curtain (beam) detector (col 7 lines 34-47). However there is no disclosure of a vacuum sensor.

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ a vacuum sensor as an obvious variation of the compressed air sensor and thereby control wire feeding and positioning (col 3 lines 6-12).

7. Claims 4-6, 10-12 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama et al. (USPN 5176310) in view of Asanasavest (USPN 5230458).

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Akiyama teaches a wire bonder comprising a bondhead (6), a power supply for driving the bondhead (col 7 lines 5-10), a power switch for controlling the power supply (col 10 line 65 – col 21 line 53), a means for setting time (col 17 line 63 – col 19 line 33 and col 24 lines 23-53), a control program and an emergency switch (18e,18f) which produces a signal. The device is capable of switching off electrical consumers not required (figures 1 and 7-9, col 7 lines 11-37 and col 15 lines 37-58). The device further comprises a power sensor, a height sensor (col 7 lines 11-37 and col 24 line 55 – col 25 line 55), an air sensor (col 9 line 58 – col 10 line 6), and a light curtain detector (col 9 lines 9-57). However there is no disclosure of a pressure sensor or vacuum sensor.

Asanasavest teaches a height detector comprising a pressure (force) sensor (col 3 line 63 – col 4 line 10 and col 4 line 45 – col 5 line 24) and switches (col 6 lines 5-36).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ a force sensor in combination with the height sensor as is common on the art to prevent damage to the tool or substrate during bonding and to employ a vacuum sensor as an obvious variation of the compressed air sensor and thereby control wire feeding and tensioning (Akiyama, col 9 line 58 – col 10 line 6).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Haji (USPN 6093904, vacuum sensor), Narita et al. (USPN 6302317 B1, light, air sensors), Komoriya et al. (USPN 5400503, light, pressure

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sensors), Razon et al. (USPN 5890643, switches), Johansen (US 2005/0061848 A1, switches), Smith Jr. (USPN 4824005), Matsumoto (JPN 04-78147A, pressure sensor), and Weaver (USPN 5357423).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (571) 272-1172. The examiner can normally be reached on Monday through Thursday from 6:30 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lynne Edmondson
Primary Examiner
Art Unit 1725

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3/7/06

LRE